PATENTS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Eiji Tsuboi	**Examiner**:	T. Vo
Serial No:	Unassigned	**Art Unit**:	2613
Filed:	Herewith	**Docket**:	13040Z
For:	DECODNG SYSTEM AVAILABLE FOR COMPRESSED DATA STREAMS FOR CONCURRENTLY REPRODUCINGSTABLE PICTURES METHOD FOR DECODING COMPRESSED DATA STREAMS AND INFORMATION STORAGE MEDIUM FOR STORING PROGRAMMED INSTRUCTIONS REPRESENTATIVE OF THE METHOD	**Dated**:	February 5, 2002

Assistant Commissioner for Patents
United States Patent and Trademark Office
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Sir:

Prior to examination, please amend the above-identified application as follows:

IN THE CLAIMS:

Please cancel claims 1-12 and insert the following new claims 13-16:

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Dated: February 5, 2002

Mishelle Mustafa

13. (New) A compressed data stream decoder comprising;

an MPEG video decoder with plural compressed data streams coded in MPEG for decoding said plural compressed data streams and outputting decoded pictures and a frame memory for storing said decoded pictures;

the frame memory having groups of frame memories, the number of frame memories being redundant rather than the types of pictures assigned to the compressed data streams, each of the groups of frame memories including a frame memory for storing a core picture decoded as the latest one, which is an I picture or P picture, a frame memory for storing a core picture decoded immediately before it, a frame memory for storing a B picture decoded as the latest one, and a frame memory for storing a picture unnecessary for a predictive coding;

wherein, after starting the decoding, the MPEG video decoder changes the assignment to the frame memories in decoding use for the core picture from the storage of the latest core picture to the storage of the core picture decoded immediately before it, the frame memory for storing the core picture decoded immediately before it to the data storage of the picture unnecessary for the predictive coding, and the frame memory for storing the picture unnecessary for the predictive coding to the storage of the core picture decoded as the latest one, thereby storing a core picture to the frame memory for storing the core picture as the latest one and in decoding the B picture from the frame memory for storing the latest B picture to the storage of the picture unnecessary for the predictive coding for another picture and the frame memory for storing the picture unnecessary for the predictive coding for another picture unnecessary for the predictive coding for another picture to the storage of the

latest B picture, thereby storing a latest B picture in the frame memory assigned to the latest B picture.

14. (New) The compressed data stream decoder of claim 13, wherein the MPEG video decoder has Not Use, Core 1, Core 0 and B circuits assigned to each of the groups for storing the numbers assigned to four of the frame memories, wherein when a picture to be decoded is a B picture, the number stored in the circuit B and the number stored in the circuit Not Use are exchanged, when a picture to be decoded is a core picture, the number stored in the circuit Core 1 is transferred to the circuit Core 0, the number stored in the circuit Core is transferred to the circuit Not Use and the number stored in the circuit Not Use is transferred to the circuit Core 1, making the number stored in the circuit Not Use corresponding to the frame memory for storing the picture unnecessary for the predictive coding for another picture, the number stored in the circuit Core 1 corresponding to the frame memory for storing the core picture as the latest one, the number stored in the circuit Core 0 corresponding to the frame memory for storing the core picture decoded immediately before it and the number of the circuit B corresponding to the frame memory for storing the latest B picture, the numbers stored in those four circuits are thus exchanged so as to circulate the assignment to the frame memories of each group.

15. (New) A decoding method comprising:

inputting plural compressed data streams coded through MPEG;

decoding the compressed data streams;

outputting decoded pictures and storing the decoded pictures in a frame memory, wherein the frame memory has groups of frame memories each having the number

of frame memories redundant rather than the types of pictures assigned to one of the compressed data streams and wherein each of the groups of frame memories having a frame memory for storing a core picture decoded as the latest one of the I picture and P picture, a frame memory for storing a core picture decoded immediately before it, a frame memory for storing a B picture decoded as the latest one, and a frame picture for storing a picture unnecessary for a predictive coding of another picture;

if the decoding is carried out on the core pictures:

changing the frame memory assigned to the core picture decoded as the latest one to the frame memory for storing the core picture decoded immediately before it,

changing the frame memory assigned to the core picture decoded immediately before to the frame memory for storing the picture unnecessary for the predictive coding for another picture; and

changing the frame memory assigned to the picture unnecessary for the predictive coding of another picture to the frame memory for storing the core picture decoded as the latest one, whereby a decoded core picture is stored in the frame memory changed to the latest core picture;

if the decoding is carried out on the B pictures:

changing the frame memory assigned to the B picture decoded as the latest one to the frame memory unnecessary for the predictive coding for another picture; and

changing the frame memory assigned to the picture unnecessary for the predictive coding for another picture to the frame memory for storing the latest B picture, whereby a latest B picture is stored in the frame memory assigned to the B picture decoded as the latest one; and

repeating the changing steps for each of the groups of frame memories.

16. (New) The method of claim 15, wherein circuits are associated with each of the groups of frame memories and used for storing variables Not Use, Core 1, Core 0 and B identical with the numbers assigned to the four frame memories, the method further comprising:

when the pictures to be decoded are B pictures, exchanging the number stored as the variable B for the number stored as the variable Not Use,

when the pictures to be decoded are core pictures:

transferring the number stored as the variable Core 1 to the circuit storing the variable Core 0;

transferring the number stored as the variable Core 0 to the circuit storing the variable Not Use; and

transferring the number stored as the variable Not Use to the circuit storing the variable Core 1;

wherein the number stored as the variable Not Use corresponds to the frame memory unnecessary for the predictive coding for another picture, the number stored as the variable Core 1 corresponds to the frame memory for storing the core picture decoded as the latest one, the number stored as the variable Core 0 corresponds to the frame memory for storing the core picture decoded immediately before it, and the number stored as the variable B corresponds to the frame memory for storing the latest B picture; and

circulating the numbers stored as the four variables for each group so that the assignment to the four memories are circulated for each group.

IN THE SPECIFICATION:

After the title, please add the following new paragraph:

--CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation of U.S. serial no. 09/407,566 filed on September 28, 1999.--

REMARKS

It is respectfully requested that this Preliminary Amendment be entered in the above-identified application prior to examination.

By means of the present Preliminary Amendment, the claims of record have been canceled and new claims 13-16 have been added. New claims 13 to 16 are directed to circulating use of frame memories such that the latest picture is stored in the frame memory assigned to the picture unnecessary for the predictive coding for another picture. Thus, even if a data read-out from a memory and data write-in to the memory are concurrently requested, a malfunction does not take place. This feature is neither disclosed nor suggested in the cited references. New claims 13-16 are supported throughout the disclosure. Therefore, no new matter has been entered into the disclosure by the addition of new claims 13-16.

The present application has also been amended to include a cross reference to the parent application, U.S. serial No. 09/407,566 filed on September 28, 1999.

In view of the above, early and favorable consideration are respectfully requested.

Respectfully submitted,

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